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United States Patent [19]

Faour et al.

[11] **Patent Number:** 6,004,582[45] **Date of Patent:** Dec. 21, 1999[54] **MULTI-LAYERED OSMOTIC DEVICE**[75] **Inventors:** **Joaquina Faour; Jorge Mayorga**, both of Buenos Aires, Argentina[73] **Assignee:** **Laboratorios Phoenix U.S.A, Inc.**, Buenos Aires, Argentina[21] **Appl. No.:** 09/086,871[22] **Filed:** May 29, 1998[51] **Int. Cl.⁶** A61K 9/22; A61K 9/24[52] **U.S. Cl.** 424/473; 424/468; 424/472; 424/474; 424/476; 424/475; 424/479; 424/482[58] **Field of Search** 424/468, 472, 424/473, 476, 479, 482, 474, 475[56] **References Cited****U.S. PATENT DOCUMENTS**

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5,681,584 10/1997 Savastano et al. 424/473*Primary Examiner*—Thurman K. Page*Assistant Examiner*—Lakshmi Channavajjala*Attorney, Agent, or Firm*—Rick Matos; Akin, Gump, Strauss, Hauer & Feld, L.L.P.[57] **ABSTRACT**

The present invention provides a simple and improved multi-layered osmotic device (1) that is capable of delivering a first active agent in an outer lamina (2) to one environment of use and a second active agent in the core (5) to another environment of use. Particular embodiments of the invention provide osmotic devices in which the first and second active agents are similar or dissimilar. An erodible polymer coat (3) between an internal semipermeable membrane (4) and a second active agent-containing external coat (2) comprises poly(vinylpyrrolidone)-(vinyl acetate) copolymer. This particular erodible polymer results in an improved multi-layered osmotic device possessing advantages over related devices known in the art. The active agent in the core (5) is delivered through a pore (6) containing an erodible plug (7). The osmotic device (1) can be coated by a final finish coat (8).

23 Claims, 1 Drawing Sheet